

(a) **Independent variable:** \rightarrow A variable which takes up any desired value within the specified limits is called an independent variable.

e.g. In the eqn $y = x + 2$, if x takes the value from 0 to 2, then

For $x = 0$, $y = 0 + 2$ i.e. $y = 2$

For $x = 1$, $y = 1 + 2$ i.e. $y = 3$

For $x = 2$, $y = 2 + 2$ i.e. $y = 4$

Here x takes value independently and hence x is independent variable.

(b) **Dependent variable:** \rightarrow A variable whose value depends upon the value of any other variable is called a dependent variable.

e.g. In the above equation $y = x + 2$, the value of y depends upon the value of x i.e. $y = 2$, if $x = 0$, $y = 3$, if $x = 1$, $y = 4$ if $x = 2$.

Hence y is dependent variable and x is independent variable.

Function

If two variables x and y are so related that value of y depends upon the value of x , then y is called the function of x and is written as $y = f(x)$.

e.g. Let $y = 3x^2 + 7x + 2$ is a function of x

if $x = 1$, then $y = 3(1)^2 + 7 \cdot 1 + 2 = 3 + 7 + 2 = 12$

if $x = 2$, then $y = 3(2)^2 + 7 \cdot 2 + 2 = 12 + 14 + 2 = 28$

Thus we find that corresponding to each